

## CLAIMS

What is claimed is:

- 1 1. A lamp housing apparatus comprising:
  - 2 a reflector capable of reflecting a visible light but passing a radiation emitted from a
  - 3 light source disposed within the reflector; and
  - 4 a housing coupled to the reflector, the housing having an inner surface capable of
  - 5 absorbing the passed radiation and an outer surface having a plurality of formations to
  - 6 enlarge the area of the outer surface so that the absorbed radiation can be transmitted as
  - 7 heat from the inner surface to the outer surface at a reduced temperature.
- 1 2. The lamp housing apparatus of claim 1, wherein the housing is further capable of
- 2 blocking the visible light that strays from the reflector.
- 1 3. The lamp housing apparatus of claim 2, wherein the inner surface of the housing is
- 2 prepared to block the stray visible light.
- 1 4. The lamp housing apparatus of claim 2, wherein the inner surface of the housing is
- 2 prepared to enhance absorptivity of the passed radiation.
- 1 5. The lamp housing apparatus of claim 4, wherein the inner surface of the housing is
- 2 prepared to enhance absorptivity of the passed radiation by applying a coating of an
- 3 opaque material.
- 1 6. The lamp housing apparatus of claim 5, wherein the opaque material is paint.

1 7. The lamp housing apparatus of claim 4, wherein the inner surface of the housing is  
2 prepared to enhance absorptivity of the passed radiation by anodization.

1 8. The lamp housing apparatus of claim 4, wherein the inner surface of the housing is  
2 prepared to enhance absorptivity of the passed radiation by peening.

1 9. The lamp housing apparatus of claim 4, wherein the inner surface of the housing is  
2 prepared to enhance absorptivity of the passed radiation by knurling.

1 10. The lamp housing apparatus of claim 2, wherein the outer surface of the housing  
2 blocks the stray visible light.

1 11. The lamp housing apparatus of claim 1, wherein the housing is capable of containing  
2 an explosion of the light source.

1 12. The lamp housing apparatus of claim 1, wherein the absorbed radiation is infrared  
2 (IR) radiation.

1 13. The lamp housing apparatus of claim 1, wherein the plurality of formations are plates  
2 disposed in a parallel manner across the outer surface of the housing.

1 14. The lamp housing apparatus of claim 1, wherein the plurality of formations are fins  
2 disposed longitudinally across the outer surface of the housing.

1 15. The lamp housing apparatus of claim 1, wherein the plurality of formations are rings  
2 disposed latitudinally across the outer surface of the housing.

1 16. The lamp housing apparatus of claim 1, wherein the housing and the reflector are  
2 formed as an integral unit.

1 17. A apparatus comprising:

2 a means for a reflector that is capable of reflecting a visible light but passing a  
3 radiation emitted from a means for a light source disposed within the reflector; and  
4 a means for a housing coupled to the reflector means, the housing means having an  
5 inner surface and an outer surface, wherein the housing means include a means for  
6 absorbing the passed radiation through the inner surface and a means for enlarging the  
7 area of the outer surface with a plurality of formations so that the absorbed radiation can  
8 be transmitted as heat from the inner surface to the outer surface at a reduced  
9 temperature.

1 18. The apparatus of claim 17, wherein the housing means further includes a means for  
2 blocking the visible light that strays from the reflector.

1 19. The apparatus of claim 18, wherein the means for blocking the stray visible light is  
2 provided by applying to the inner surface a coating of an opaque material.

1 20. The apparatus of claim 19, wherein the opaque material is paint.

1 21. The apparatus of claim 17, wherein the means for absorbing the passed radiation  
2 through the inner surface is enhanced by applying to the inner surface a coating of an  
3 opaque material.

1 22. The apparatus of claim 21, wherein the opaque material is paint.

1 23. The apparatus of claim 17, wherein the means for absorbing the passed radiation  
2 through the inner surface is enhanced by anodizing the inner surface.

1 24. The apparatus of claim 17, wherein the means for absorbing the passed radiation  
2 through the inner surface is enhanced by peening the inner surface.

1 25. The apparatus of claim 17, wherein the means for absorbing the passed radiation  
2 through the inner surface is enhanced by knurling the inner surface.

1 26. The apparatus of claim 18, wherein the means for blocking the stray visible light is  
2 provided by the outer surface of the housing.

1 27. The apparatus of claim 17, wherein the housing further includes means for containing  
2 an explosion of the light source.

1 28. The apparatus of claim 17, wherein the means for absorbing the passed radiation  
2 includes a means for absorbing infrared (IR) radiation.

1 29. The apparatus of claim 17, wherein the plurality of formations are plates disposed in a  
2 parallel manner across the outer surface of the housing.

1 30. The apparatus of claim 17, wherein the plurality of formations are fins disposed  
2 longitudinally across the outer surface of the housing.

1 31. The apparatus of claim 17, wherein the plurality of formations are rings disposed  
2 latitudinally across the outer surface of the housing.

1 32. The apparatus of claim 17, wherein the housing and the reflector means are formed as  
2 an integral unit.

1 33. A method for managing light and radiation in a lamp comprising:  
2 disposing a lamp that emits a visible light and a radiation in a reflector, the reflector  
3 reflecting the visible light but passing the radiation; and  
4 encasing the lamp and reflector in a housing, the housing having an inner surface that  
5 absorbs the passed radiation and an outer surface from which extend a plurality of  
6 formations to enlarge the area of the outer surface so that the absorbed radiation can be  
7 emitted as heat from the outer surface at a reduced temperature.

1 34. The method of claim 33, further comprising blocking the visible light that strays from  
2 the reflector with the housing.

1 35. The method of claim 34, wherein the blocking is performed by the inner surface of  
2 the housing.

1 36. The method of claim 34, wherein the blocking is performed by the outer surface of  
2 the housing.

1 37. The method of claim 34, further comprising containing an explosion of the lamp with  
2 the housing.

1 38. The method of claim 34, wherein the absorbed radiation is infrared (IR) radiation.

1 39. The method of claim 34, wherein the plurality of formations are plates disposed in a  
2 parallel manner across the outer surface of the housing.

1 40. The method of claim 34, wherein the plurality of formations are fins disposed  
2 longitudinally across the outer surface of the housing.

1 41. The method of claim 34, wherein the plurality of formations are rings disposed  
2 latitudinally across the outer surface of the housing.

1 42. The method of claim 34, further comprising forming the housing and the reflector as  
2 an integral unit.

1 43. A projection lamp system, comprising:  
2 a projector case having a touchable surface;  
3 a lamp housing disposed within the projector case, the lamp housing having a  
4 reflector capable of reflecting a visible light but passing a radiation emitted from a light  
5 source disposed within the reflector; and a housing coupled to the reflector, the housing  
6 having an inner surface capable of absorbing the passed radiation and an outer surface  
7 having a plurality of formations to enlarge the area of the outer surface so that the  
8 absorbed radiation can be transmitted as heat from the inner surface to the outer surface  
9 at a reduced temperature, and so that the touchable surface of the projector case is within  
10 the safety requirements for touch temperature.

1 44. The projection lamp system of claim 43, wherein the housing is further capable of  
2 blocking the visible light that strays from the reflector.

1 45. The projection lamp system of claim 44, wherein the inner surface of the housing is  
2 prepared to block the stray visible light.

1 46. The projection lamp system of claim 44, wherein the inner surface of the housing is  
2 prepared to enhance absorptivity of the passed radiation.

1 47. The projection lamp system of claim 46, wherein the inner surface of the housing is  
2 prepared to enhance absorptivity of the passed radiation by applying a coating of an  
3 opaque material.

1 48. The projection lamp system of claim 47, wherein the opaque material is paint.

1 49. The projection lamp system of claim 46, wherein the inner surface of the housing is  
2 prepared to enhance absorptivity of the passed radiation by anodization.

1 50. The projection lamp system of claim 46, wherein the inner surface of the housing is  
2 prepared to enhance absorptivity of the passed radiation by peening.

1 51. The projection lamp system of claim 46, wherein the inner surface of the housing is  
2 prepared to enhance absorptivity of the passed radiation by knurling.

1 52. The projection lamp system of claim 44, wherein the outer surface of the housing  
2 blocks the stray visible light.

1 53. The projection lamp system of claim 43, wherein the housing is capable of containing  
2 an explosion of the light source.

1 54. The projection lamp system of claim 43, wherein the absorbed radiation is infrared  
2 (IR) radiation.

1 55. The projection lamp system of claim 43, wherein the plurality of formations are plates  
2 disposed in a parallel manner across the outer surface of the housing.

1 56. The projection lamp system of claim 43, wherein the plurality of formations are fins  
2 disposed longitudinally across the outer surface of the housing.

1 57. The projection lamp system of claim 43, wherein the plurality of formations are rings  
2 disposed latitudinally across the outer surface of the housing.

1 58. The projection lamp system of claim 43, wherein the housing and the reflector are  
2 formed as an integral unit.